

4 determining a maximum averaged peak-to-mean ratio;  
5 determining a minimum averaged peak-to-mean ratio;  
6 determining [a first result being] a difference between the maximum averaged peak-to-  
7 mean ratio and the averaged peak-to-mean ratio for the current audio frame;  
8 determining [a second result being] a difference between the maximum averaged peak-to-  
9 mean ratio and the minimum averaged peak-to-mean ratio; and  
10 conducting a ratio [between the first result and the second result to produce the peak-to-  
11 mean likelihood ratio], a denominator of the ratio being the difference between the maximum  
12 averaged peak-to-mean ratio and the minimum averaged peak-to-mean ratio, the numerator being  
13 the difference between the maximum averaged peak-to-mean ratio and the averaged peak-to-  
14 mean ratio.

1 7. (Amended) A communication module comprising:  
2 a substrate;  
3 a processing unit placed on the substrate; and  
4 a memory coupled to the processing unit, the memory to contain a voice activity detector  
5 which, when executed by the processing unit, analyzes a short-term averaged energy, a long-term  
6 averaged energy, and a normalized peak-to-mean likelihood ratio in order to determine whether a  
7 current audio frame represents voice or silence.

C4 sub C5  
2 13. (Amended) A machine readable medium having embodied thereon a computer  
3 program for processing by a machine, the computer program comprising:  
4 a first routine for determining a normalized peak-to-mean likelihood ratio; and  
5 a second routine for comparing the peak-to-mean likelihood ratio to a selected threshold  
6 to determine whether an audio frame being transmitted represents a voice signal.

sub C5  
1 18. (Amended) A voice activity detector comprising:

2 circuitry to determine a short-term averaged energy for an audio frame;  
3 circuitry to determine a long-term averaged energy for the audio frame;  
4 circuitry to determine whether the short-term averaged energy is greater than the long-  
5 term averaged energy by a predetermined factor;  
6 circuitry to determine whether a difference between the long-term averaged energy and  
7 the short-term averaged energy is less than a predetermined threshold when the short-term  
8 averaged energy is greater than the long-term averaged energy by the predetermined factor;  
9 circuitry to determine a normalized peak-to-mean likelihood ratio when the difference  
10 between the long-term averaged energy and the short-term averaged energy is less than the  
11 predetermined threshold; and  
12 circuitry to comparing the peak-to-mean likelihood ratio to a selected threshold and to  
13 determine that the audio frame represents a voice signal when the peak-to-mean likelihood ratio  
14 is greater than a selected threshold.